

# SUPPORT OF THE SIX CRITICAL OPERATIONAL GOALS (COGS)

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## SIX CRITICAL OPERATIONAL GOALS FOR TRANSFORMATION

- **Protecting Critical Bases of Operations** (U.S. homeland, forces deployed, allies, and friends) from CBRNE weapons and their means of delivery.
- **Projecting** and sustaining U.S. forces in distant anti-access and area-denial environments and defeating anti-access and area-denial threats.
- **Denying** enemies sanctuary by providing persistent surveillance, tracking and rapid engagement with high-volume precision strike, through a combination of complementary air and ground capabilities, against critical mobile and fixed targets.
- **Assuring** information systems in the face of attack and conducting effective information operations.
- **Enhancing** the capability and survivability of space systems and supporting infrastructure.
- **Leveraging** information technology and innovative concepts to develop an interoperable, joint C4ISR architecture and capability that includes a tailorable joint operational picture.

The Army capabilities described in the preceding chapters support the six critical operational goals for Defense Transformation. The following is a summary of key updates from the information related to COGs provided in last year's Roadmap.

### PROTECTING CRITICAL BASES OF OPERATION (U.S. HOMELAND, FORCES DEPLOYED, ALLIES AND FRIENDS) FROM CBRNE WEAPONS AND THEIR MEANS OF DELIVERY.

The Army's efforts to protect critical bases of operations and defeat CBRNE weapons and their means of delivery continue along two mutually supporting axes: protecting the U.S. homeland, our most important responsibility, and protecting the Joint Force. The latter subsumes the defense of allies and friends from whose territory the Joint Force might operate.

The Army has begun several organizational initiatives to transform its support to HLS. Working closely with NORTHCOM, the Army will complete the development of its underlying concept for homeland defense in 2004. Supporting the HLS JOC, the Army will continue to provide unique capabilities for HLD, CS, and EP. To improve its ability to support CBRNE defense both in the homeland and to the Joint Force, the Army will form a CBRNE command. This command will integrate, coordinate, deploy, and provide trained and ready CBRNE defense forces, and will exercise command and control of full-spectrum CBRNE operations to JFCs. The CBRNE command will also provide Army support to civil authorities for homeland defense, while maintaining technical links with appropriate joint, federal, and state CBRNE assets, as well as research, development and technical communities to assure Army CBRNE response

readiness. In addition to the CBRNE command, the Army has formed, and designated a commander of the Global Air and Missile Defense Command and begun the AGRI and CONUSA redesign to support homeland defense for the future.

Protecting critical bases of operations also includes Army installations, the source of power projection and reachback capabilities. The Joint Services Installation Pilot Program (JSIPP) and Joint Program Guardian are designed to further enhance installation emergency response capabilities for CBRNE events. These initiatives will also further enhance chemical and biological detection capabilities on Army installations. Guardian will provide prioritized Army installations with an integrated CBRNE protection and response capability to reduce casualties, maintain critical operations, contain contamination, and effectively restore critical operations. JSIPP will initially provide chemical and biological detection technology to pilot domestic Army installations, and connect this detection capability to the installation's emergency management centers. JSIPP will also provide equipment and training to the emergency responders on the installations, including police, fire, medical, and explosive ordnance disposal. Additionally, the Army will create 11 Installation Support Teams (ISTs) and four Regional Response Teams (RRTs) in FY04-05 to complement this joint effort.

For deployed joint forces, the Army will significantly improve contamination avoidance capability with a standoff detection capability for biological weapons. Beginning in FY05, an interim Joint Biological Standoff Detection System (JBSDS) will be fielded that will provide Joint commanders with an early-warning biological detection capability. Standoff technology will enable nuclear, biological, and chemical (NBC) defense units to detect biological warfare agents up to five kilometers away and discriminate up to three kilometers away. The fielding of the CBRNE Battle Management System in FY06

will provide joint forces with a common database architecture for NBC warning, reporting, and battlefield management.

To defend the Nation from the increased threat and global proliferation of ballistic missiles, DOD is developing a Ballistic Missile Defense System (BMDS) that is a key element of the NSS and a mission of national strategic importance. The Army's GMD element is the cornerstone of Initial Defense Operations (IDO) to be established by the end of FY04. It will have an IDO capability not later than 30 September 2004. Additionally, within established Joint processes, the Army will aggressively develop terrestrial-based missile defense forces and exploit the capabilities of other missile defense systems and air and space sensors to support Future Force capabilities.

### **PROJECTING AND SUSTAINING U.S. FORCES IN DISTANT ANTI-ACCESS AND AREA-DENIAL ENVIRONMENTS AND DEFEATING ANTI-ACCESS AND AREA-DENIAL THREATS.**

The most significant development for this critical operational goal over the last year has been the Army's repositioning with the Integrated Global Basing and Positioning Strategy. Supporting efforts contributing to this capability are APS reconfiguration, the Army Regional Flotilla (ARF) concept and expeditionary basing. The conceptual driver for this capability is the current 1-4-2-1 DOD force-sizing construct. The primary purpose for reconfiguring APS is to enhance responsiveness to crises in the four designated critical regions (Northeast Asia, East Asian Litorals (EAL), SWA and Europe). Pre-positioned assets have been reapportioned and relocated to sites providing better response in these regions.

In addition to changes in ground-based pre-positioned stocks, the Army is adapting afloat stocks to better align with the evolving defense strategy. Afloat APS will evolve over time using an ARF concept. The ARF concept envisions

dividing afloat APS into three afloat sets, dispersed geographically, providing modular capabilities designed and loaded to provide combatant commanders with more flexible response options.

Expeditionary basing concepts are also being considered to mitigate anti-access and area-denial challenges. Concepts under consideration include floating forward-staging bases and an afloat air assault capability. The Army's continued procurement of the shallow draft TSV will contribute greatly to defeating anti-access and area-denial threats by providing greatly enhanced employment options for JFCs.

**DENYING ENEMIES SANCTUARY BY PROVIDING PERSISTENT SURVEILLANCE, TRACKING AND RAPID ENGAGEMENT WITH HIGH-VOLUME PRECISION STRIKE, THROUGH A COMBINATION OF COMPLEMENTARY AIR AND GROUND CAPABILITIES, AGAINST CRITICAL MOBILE AND FIXED TARGETS.**

Current and future operational environments will feature adversaries who will avoid direct confrontation with U.S. forces wherever possible, unless it is to their advantage. The overwhelming combat power of the Joint Force compels the enemy to find ways to mitigate force application (maneuver and precision engagement) capabilities such as hiding among noncombatants and using hardened, camouflaged, and concealed positions to avoid detection and attack by fires. Ground forces are often the only instruments that can deny the enemy sanctuary and attack targets to achieve desired effects.

Army forces provide significant force application capabilities across the spectrum of conflict in all weather and terrain to the JFC. Army Transformation efforts are providing a wide range of DOTMLPF integrated solutions that enhance these capabilities to make it a more maneuverable, precise, and lethal force for denying

enemies sanctuary. Recent joint operations in Afghanistan and Iraq have provided initial, positive results for the Army Transformation efforts and demonstrated the importance of the Soldier on the ground to determine the final and sustaining outcome of victory in combat.

Army modernization and recapitalization efforts involve development and fielding of new equipment systems and the rebuild and selective upgrade of existing equipment. These efforts improve Joint Force capabilities (i.e., maneuverability, persistent surveillance, tracking, targeting, munitions range, precision, and lethality effects, and damage assessment) by developing and integrating a system of systems.

The M270A1 MLRS, AN/TPQ-36 Firefinder (V5, V7, V8) Radar, Field Artillery Ammunition Supply Vehicle (FAASV), and Patriot GSE are all systems being rebuilt under the Army's recapitalization program focused on improving its counterattack corps assets. This program improves unit effectiveness and warfighting capability by extending the useful life of equipment as well as improving its reliability, safety, and maintainability and reducing operation and support costs. Upgrading the Paladin's Automatic Fire Control System (AFCS) with the updated Paladin Digital Fire Control System (PDFCS), upgrading the Firefinder Radar, and fielding the Advanced Field Artillery Tactical Data System (AFATDS) are also key equipment upgrades providing improved digitization and situational awareness to maintain capability overmatch.

In FY05, the Army will begin fielding enhanced force application capabilities in indirect fire systems such as the lightweight 155mm (LW155) Howitzer, the HIMARS, and the AN/TPQ-47 Firefinder Radar System. The LW155 and HIMARS will replace most M198 Howitzers in the Army and provide a mobile, deployable, deep-strike capability for early-entry operations. The Firefinder AN/TPQ 47 Radar will provide improved targeting capabilities at operational depths to support Joint Force opera-

tions. The Army is currently fielding SBCT with improved capabilities that will include the LW155. HIMARS, while not organic to the SBCT, will be available to provide medium- and long-range GMLRS rocket and ATACMS missile fires. Additionally, SBCTs will be fielded with the Phoenix Sensor System to replace the aging AN/TPQ-37 artillery locating radar to provide a detection capability for mortars to 15 km, rockets to 150 km, and missile launches to 300 km.

Besides indirect fire systems, there are other systems being fielded that enhance force application capabilities. For example, the Land Warrior program will make the individual infantry Soldier a sensor, decision maker, shooter, and assessor of a full range of joint effects. Profiler, the next generation meteorological system, will provide target-area meteorological information critical to accurate fires in the JOA.

To shape the battlespace and conduct decisive operations, the Army is also moving toward common munitions and a suite of long-range, precision-strike weapons. The corps commander will have a true organic deep-strike capability with rockets and missiles that have longer ranges, more lethality, and increased precision than those currently fielded. The Army will also begin production of smart and brilliant munitions, greatly increasing lethality against selected high-value targets while decreasing logistical and ammunition requirements.

Force application capabilities will be significantly enhanced by FCS development and fielding by the end of this decade. FCS is the centerpiece of the Future Force providing fundamental changes in warfighting capabilities. Science and technology will provide for the development of smaller, lighter, more mobile weapons platforms capable of effective fire support throughout the battlefield. Technological advances will be applied to target accuracy, artillery acquisition, and area meteorology systems for the Future Force. Advances in composite materials and ballistic protection technology will

be applied to existing and future systems to reduce weight and increase deployability, survivability, and maneuverability. Unifying the Future Force will be a networked C2 system of fires that fully integrates all FCS component systems and links to joint fires.

There are a number of FCS designs currently being considered to provide enhanced force application capabilities to the Joint Force. It is envisioned that the FCS NLOS cannon will replace both 105mm and 155mm systems at the UA level to provide accurate, reliable, responsive on-demand, 24-hour, all-weather, and all-terrain close supporting fires with a wide array of precision and nonprecision munitions for the Future Force. Additionally, NLOS mortars will provide support to the UA. The FCS NLOS-Launch System (NLOS-LS), a networked system of missile launchers with C2 systems, will be fielded at the UA and UE levels to provide precision and loitering attack munitions. HIMARS Preplanned Product Improvement (P3I) will provide a lightweight, deployable weapons platform to support the UE with GMLRS and ATACMS missiles. This platform will be developed to support specific munitions. The combination of NLOS mortar, cannon, launch systems and HIMARS will provide the future JFC with greatly increased precision and lethal capability.

## **ASSURING INFORMATION SYSTEMS IN THE FACE OF ATTACK AND CONDUCTING EFFECTIVE INFORMATION OPERATIONS.**

The institution of information operations as an aspect of operations, more or less equivalent to offense and defense, is in itself transformational for the Army. The general strategy is to focus on the development of adaptive Soldiers and leaders who are the essential component of this capability. As this cadre of adaptive leaders and Soldiers grows and matures, the Army will integrate them and the capability they create into increasingly lower echelons. Finally, the Army will enable them with adaptive and flexible programs for acquiring and developing technology



for immediate use, creating the responsiveness required by Joint operations.

## ENHANCING THE CAPABILITY AND SURVIVABILITY OF SPACE SYSTEMS AND SUPPORTING INFRASTRUCTURE.

The interdependence of the Joint Force relies heavily upon the full range of space-based assets. As the Army transforms, it will refine and enhance its ability to exploit the capabilities of space systems and field capabilities to deny this same capability to adversaries. The Army approved a concept for space operations in *TRADOC Pamphlet 525-3-14, The United States Army Concept for Space Operations in Support of the Objective Force*, and an *Army Space Policy*, (April 2003), to establish the road ahead for enhancing Future Force capabilities. These documents will guide the Army as it develops future capabilities and coordinates requirements with the other Services.

The Army role in space operations is guided by five essential tasks: enable situational understanding and joint battle command en route, off-the-ramp, and on-the-move; support precision maneuver, fires, and sustainment; contribute to continuous information and decision superiority; support increased deployability by reducing in-theater footprint; and protect the force during all phases of operations.

To accomplish these tasks, space-based systems must improve and transform. Tactically relevant space systems and services require unprecedented levels of responsiveness, accuracy, timeliness, and dynamic interaction with other battlefield systems. Therefore, the Army shall pursue and advocate the following capabilities:

- **Responsive, dynamic, space-based intelligence, surveillance, and reconnaissance sensors networked with land, sea, air, and Soldier sensors** that enable responsive in-theater tasking, rapid retasking, processing, and exploitation through reach, forward downlink sites and direct push-pull links to tactical

forces

- **Seamlessly integrated, dynamic bandwidth satellite communications (SATCOM) on the move** providing dismounted and mounted forces, who use advanced antenna technology, with assured and immediate reach in all directions to any distance for continuous battle command, communications, intelligence, and collaborative, distributed mission planning and rehearsals
- **Responsive, tactically relevant space control capabilities synchronized and integrated with land, sea, air, and information operations** to support continuous information, Joint battle command, and decision superiority using a mix of Army land-based and Joint air-, sea- and space-based capabilities to rapidly assess space-based capabilities impact to operations, protect land force interfaces to space systems and, if necessary, negate (deny, disrupt, deceive, degrade, and destroy) enemy use of space system capabilities
- **Assured, accurate, real-time missile warning and tracking distributed directly to affected forces and Battle Command Systems** to enhance protection through accurate prediction of impact areas and immediate warning to those in affected areas, and enhance survivability through continuous, real-time, target-quality tracking of ballistic and cruise missiles for battle command cueing and intercept using integrated missile defense capabilities
- **Precise, redundant, jam-resistant position, velocity, navigation, and timing services** using strengthened signals from GPS and augmentation capabilities to enable effective battle command and precision engagement through continuous and precise real-time position and tracking of forces and assets; assured navigation in hostile environments and complex terrain; continuous timing assurance; and smart munitions guidance for standoff weapons engagements

- **Advanced sensors for timely, tailorable weather, terrain, and environmental monitoring** to provide a targeting quality terrain database for three-dimensional battlefield visualization and timely knowledge of operational impacts caused by changes in the environment

Integration of military and commercial space capabilities will contribute to the ability to achieve the information superiority and full BA necessary for full-spectrum dominance. Enabling ground commanders to operate on their own terms and at the time, place, and method of their choosing, robustly supports the Future Force to see first, understand first, act first, and finish decisively. These capabilities have been vividly demonstrated during recent combat operations in Afghanistan and Iraq, and will be shown to an even greater degree in the future.

Ongoing and planned organizational changes will enable the U.S. Army Space and Missile Defense Command (USASMDC) to better execute the Command's new role as the Army Service Component Command (ASCC) to the U.S. Strategic Command (USSTRATCOM) in a global and strategic manner. The Command recently converted the 1st Space Battalion to the first modification table of organization and equipment (MTOE) space unit in the Army. External to USASMDC, space support elements will be embedded as an organic element for Future Force organizations.

Additionally, the Army continues to train a cadre of Space Operations Officers to perform Army and Joint missions as the ASCC to USSTRATCOM. Two classes of Space Operations Officers graduated from the FY03 USASMDC Functional Area 40 Course in Colorado Springs, and classes are planned to meet future requirements in FY04.

Achievement of these space capabilities and their synergistic effects with other battlefield capabilities will dramatically change how Army and Joint forces collect, exploit, and distribute information. These integrated capabilities will

enable Soldiers and leaders to continuously assess and visualize the situation, describe the battlefield, direct the elements of combat power, and protect the force with the confidence of assured information.

### **LEVERAGING INFORMATION TECHNOLOGY AND INNOVATIVE CONCEPTS TO DEVELOP AN INTEROPERABLE, JOINT C4ISR ARCHITECTURE AND CAPABILITY THAT INCLUDES A TAILORABLE JOINT OPERATIONAL PICTURE.**

The Army's interpretation of information technology as it relates to a Joint Operational Picture is battle command. The key development for this critical operational goal is its incorporation into the Army's comprehensive strategy for battle command. In the Army's view, the purpose of C4ISR (C2 + C2 + ISR) is to enable the commander to make timely and appropriate decisions and to convey those decisions effectively to subordinates over strategic, operational, and tactical distances. The Army Battle Command Plan guides the transformation of the Army into a network-centric force no later than 2009, using a baseline of capabilities derived from the lessons learned from OEF and OIF. Concurrently, the Army will develop, build, and eventually field a single, integrated Battle Command System for the Current and Future Forces, capable of interoperating with joint and multinational forces, and other agencies.

Networked battle command depends, in part, on geospatial data production, integration, and distribution processes. Mission planning and rehearsal systems, embedded training systems, and ISR systems require consistent geospatial data. The Army and other Defense agencies have been aware of this conceptual need for some time; this awareness has not translated into rigorous definition of requirements that support the acquisition and concept development process. For this reason, the Army created a Geospatial Data Integrated Master Plan Working Group, composed of members of the Army, the Joint

Staff, and National Imaging and Mapping Agency (NIMA) to identify the requirements and develop a plan to meet them. The working group is responsible for developing a master plan that addresses the needs of the user community to

provide consistent geospatial data. The plan will ensure the acquisition, development, and fielding of an end-to-end process that addresses doctrine, policy, and architecture issues.